Utility of a Cognitive Stimulation Program in Mild Cognitive Impairment: Cognition and Quality of Life Perception

Romero M, Martinez M, Abellan MT, Molina L, Massó A, Gónzalez E, González S, López MD
EAIA-Trastorns Cognitius. CAEM – INAD. Parc de Salut Mar. Barcelona

KEYWORDS: mild cognitive impairment, cognitive stimulation program, cognition, and quality of life perception

Introduction and aim

The improvement in early detection of cognitive impairment is related to the significant increase in the prevalence of this diagnosis. Along with this phenomenon, the interest to avoid that these patients evolve to dementia has grown. Previous studies show the benefits obtained with cognitive stimulation programs (CSP) in patients diagnosed with mild cognitive impairment (MCI). In addition, it has been shown how some interactive software can be a useful tool for stimulating this group of patients in order to improve cognitive performance and thus delay the possible evolution to dementia.
The aim of this work is to assess changes in cognition and in quality of life perception in MCI patients who have participated in a CSP in a Cognitive and Behavior Disorders Unit from Barcelona.

Method

Subjects 23 outpatients (65% women) diagnosed with MCI (GDS 3) with an age of 75 ± 3.3 (mean ± sd) Exclusion criteria was low education. Mini-Mental State Examination (MMSE) basal scores were 25.3 ± 2.34 (mean ± sd) while basal scores in Quality of life in Alzheimer's Disease scale (Qom-AD) were 29.82 ± 4.67 (Table 1. Sample description)

Table 1. Sample description (N=23)

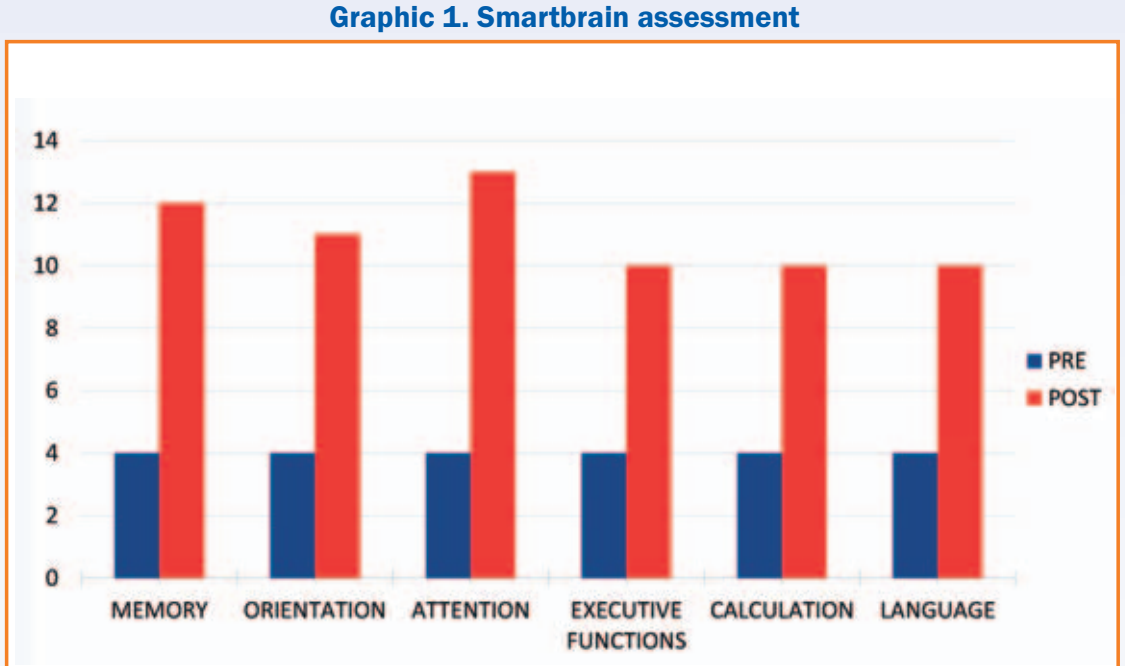
	n (%)
Sex (women)	15 (65) (mean ± sd)
Age	75±3
MMSE basal scores	25.3±2.34
QoL-AD basal scores	29.82±4.67

Methodology CSP is a 4-month program consisting on individual and group activities applied once a week with two and half hour duration. The individual part includes human-computer interaction based activities (Smartbrain program) with fifteen levels of difficulty and similar tasks in paper format. The group part stimulates a wide range of cognitive areas, emotional expression and daily life activities through audiovisual material while verbal communication and participation is encouraged.
Assessment Cognitive and quality of life perception changes were assessed through a mean comparison. MMSE and Qom-AD scores before and after CSP comparison was made using T student's statistics for this purpose. Results are expressed as a mean ±sd. In addition, Smartbrain program includes its own assessment of patient's performance improvement.

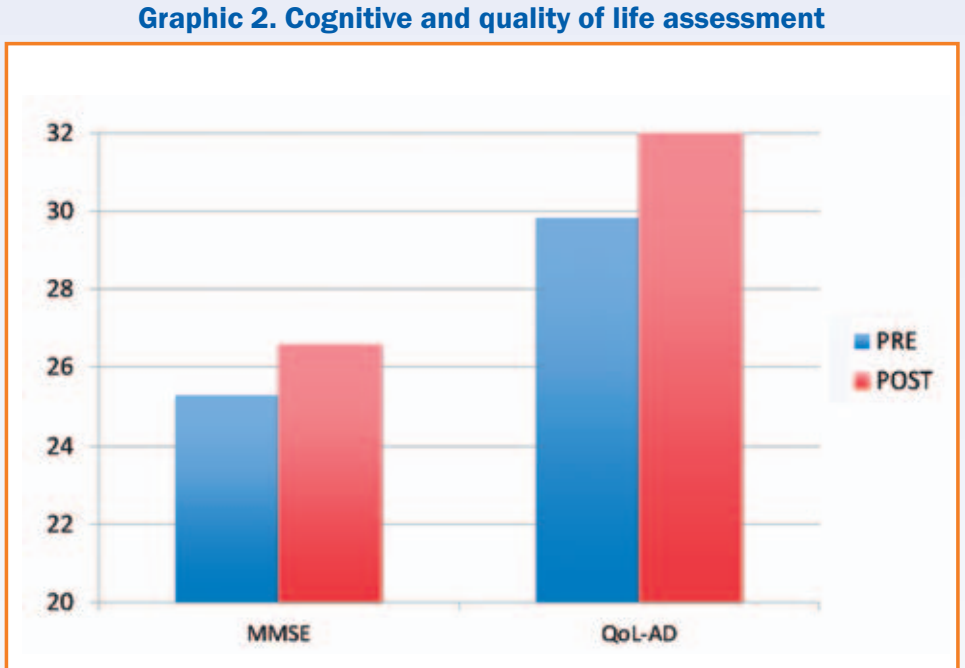
Results

Smartbrain assessment All patients were able to increase their performance in most areas after several attempts, so the level of difficulty was increased progressively. (Graphic 1. Smartbrain Assessment)
Cognitive assessment Scores after CSP were 26.57 ± 1.78 for MMSE, showing significant cognitive improvement ($p < 0.05$).
Quality if life assessment Scores after CSP were 32 ± 3.61 for QoL-AD, showing a positive tendency in quality of life increase ($p = 0.056$) (Graphic 2. Cognitive and quality of life assessment)

Graphic 1. Smartbrain assessment



Graphic 2. Cognitive and quality of life assessment



Conclusions

CSP seems to be beneficial to improve cognitive functioning and quality of life perception in mild cognitive impaired patients, even when it is made once a week.

Bibliography

- Jean, L., Bergeron, M. È., Thivierge, S., & Simard, M. (2010). Cognitive intervention programs for individuals with mild cognitive impairment: systematic review of the literature. The American Journal of Geriatric Psychiatry, 18(4), 281-296.
- Li, H., Li, J., Li, N., Li, B., Wang, P., & Zhou, T. (2011). Cognitive intervention for persons with mild cognitive impairment: A meta-analysis. Ageing Research Reviews, 10(2), 285-296.
- Rojas, G. J., Villar, V., Iturry, M., Harris, P., Serrano, C. M., Herrera, J. A., & Allegri, R. F. (2013). Efficacy of a cognitive intervention program in patients with mild cognitive impairment. International Psychogeriatrics, 25(05), 825-831.
- Zhuang, J. P., Fang, R., Feng, X., Xu, X. H., Liu, L. H., Bai, Q. K., . & Chen, S. D. (2013). The impact of human-computer interaction-based comprehensive training on the cognitive functions of cognitive impairment elderly individuals in a nursing home. Journal of Alzheimer's Disease, 36(2), 245-251.

CONTACT: Mireia Romero Sánchez. Clinical psychologist. Contact to: 99963@parcdesalutmar.cat EAIA-Trastorns cognitius